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EXAMINER	
HALEY, JOSEPH R	
ART UNIT	**PAPER NUMBER**
2627	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/743,902	PARK ET AL.	
	Examiner	Art Unit	
	Joseph Haley	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 10-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 10-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The Korean Office Action of 12/19/04 has been considered but was lined through so as to not be printed on the front of the patent.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (US 6410904) in view of the applicant's admitted prior art.

In regard to claim 1, Ito et al. teaches a drive chip integrated laser diode module comprising: a laser diode module main body to generate and emit laser light (fig. 3); a plurality of first leads protruding outwardly from the laser diode module main body to receive electric power (elements 68a-d); a drive chip (element 5); a plurality of coupling holes in the drive chip in which each of the first leads is inserted (fig. 4, see where elements 68a-c pass through drive chip 5), respectively; a plurality of inner connectors in the drive chip, electrically connected to each of the first leads (see column 8 lines 25-29), respectively; a plurality of second leads protruding outwardly from the drive chip; a main board (element 3); and a through hole in the main board through which the laser diode module main body passes (32); wherein the drive chip and the main board are integrally formed with respect to the laser diode module main body (fig. 4)

but does not teach a plurality of lands provided on the main board, electrically connected to the second leads.

The applicant's admitted prior art teaches a plurality of lands provided on the main board, electrically connected to the second leads (fig. 1 element 14).

The two are analogous art because they both deal with the same field of invention of housings for laser diodes.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the drive chip apparatus of Ito et al. with the leads and lands of the prior art. The rationale is as follows: At the time of invention it would have been obvious to provide the drive chip apparatus of Ito et al. with the leads and lands of the prior art because it would make the drive chip more easily removable.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (US 6410904) in view of the applicant's admitted prior art further considered with Miyazaki et al. (US 5018033).

In regard to claim 2, Ito et al. in view of the applicant's admitted prior art teach all of the elements of claim 2 (see claim 1 rejection above) except a bobbin connected to the base through a suspension, and movably installed in a track direction and a focus direction of the optical recording medium above the base; an objective lens mounted on the bobbin to focus light emitted from the laser diode module on the optical recording medium; a magnetic actuating unit provided across the base and the bobbin to actuate the objective lens in the track direction and the focus direction of the optical

recording medium; and a photodetector provided on the base to detect an information signal and an error signal by receiving light reflected by the optical recording medium.

Miyazaki et al. teaches a bobbin connected to the base through a suspension, and movably installed in a track direction and a focus direction of the optical recording medium above the base (elements 5, 5a and 5b); an objective lens mounted on the bobbin to focus light emitted from the laser diode module on the optical recording medium (element 5a); a magnetic actuating unit provided across the base and the bobbin to actuate the objective lens in the track direction and the focus direction of the optical recording medium (see column 3 lines 10-23); and a photodetector provided on the base to detect an information signal and an error signal by receiving light reflected by the optical recording medium (column 4 line 3).

The three are analogous art because all deal with the same field of invention of optical disc systems.

At the time of invention it would have been obvious to provide the apparatus of Ito et al. in view of applicant's admitted prior art with the moveable bobbin, objective lens and photodetector of Miyazaki et al. The rationale is as follows: At the time of invention it would have been obvious to provide the apparatus of Ito et al. in view of applicant's admitted prior art with the moveable bobbin, objective lens and photodetector of Miyazaki et al. because it would allow for the focusing and tracking of an optical disc system.

In regard to claim 3, Ito et al. teaches wherein the drive chip integrated laser diode module is installed on the base by coupling the main board and the installation

portion using a screw, and heat generated from the laser diode module main body is dissipated through the screw and the base (see fig. 4 elements 35 and 36 see also column 8 lines 37-41. Since the claimed structure is the same as Ito et al. the screw inherently will dissipate heat).

In regard to claim 4, Ito et al. teaches wherein the laser diode module main body is installed in the installation hole so as to contact an inner wall of the installation hole provided in the base, and heat generated from the laser diode module main body is dissipated through the base (see element 6).

Claims 5, 10, 11, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. in view of Chun et al. (US 6525405).

In regard to claim 5, Ito et al. teaches a laser diode module main body to generate and emit laser light (Fig. 3); a drive chip to drive the laser diode module main body (element 5); and a main board (element 3); wherein the drive chip and the main board are integrally coupled with respect to the laser diode module main body (see fig. 4); the laser diode module main body comprises a laser diode inside the laser diode module main body and a plurality of laser diode leads protruding outwardly to apply electric power to the laser diode (fig. 3), a plurality of coupling holes being formed in the mold resin of the drive chip, wherein the plurality of laser diode leads are respectively inserted into the coupling holes (fig. 6 elements 68 a-c) and a plurality of inner connectors are formed in each of the coupling holes, respectively, to which each of the laser diode leads are respectively electrically connected (column 8 lines 25-29)

but does not teach wherein the drive chip is packaged with a mold resin in a state in which a semiconductor device is mounted on a lead frame.

Chun et al. teaches wherein the drive chip is packaged with a mold resin in a state in which a semiconductor device is mounted on a lead frame (fig. 1.1 see also column 4 lines 41-47).

The two are analogous art because both deal with the same field of invention of semiconductor devices.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the drive chip apparatus of Ito et al. with the molded chip of Chun et al. The rationale is as follows: At the time of invention it would have been obvious to provide the drive chip apparatus of Ito et al. with the molded chip of Chun et al. because using the molding method of Chun et al. makes mass production easier.

In regard to claim 10, Ito et al. teaches wherein the inner connectors are provided without protruding outwardly from the coupling holes (see fig. 4 elements 68a-c. The connectors do not protrude from the housing).

In regard to claim 11, Ito et al. teaches wherein the inner connectors have a predetermined shape in which end portions of the laser diode leads are inserted (see fig. 4 elements 68a-c).

In regard to claim 14, the Ito et al. teaches a through hole in the main body through which the laser diode module main body passes (32).

In regard to claim 15, Ito et al. wherein the main board is directly coupled to a surface of the drive chip so that the structure is made compact (see fig. 4 elements 35 and 36 see also column 8 lines 37-41).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. in view of Chun et al. further considered with the applicant's admitted prior art.

In regard to claim 12, Ito et al. in view of Chun et al. teach all the elements of claim 12 except wherein the drive chip further comprises a plurality of drive chip leads protruding outwardly.

The applicant's admitted prior art teaches wherein the drive chip further comprises a plurality of drive chip leads protruding outwardly (fig. 1 element 14).

The three are analogous art because they all deal with semiconductor devices.

At the time of invention it would have been obvious to one of ordinary skill in the art to provide the drive chip apparatus of Ito et al. in view of Chun et al with the outwardly protruding leads of applicant's admitted prior art. The rationale is as follows: At the time of invention it would have been obvious to provide the drive chip apparatus of Ito et al. in view of Chun et al. with the outwardly protruding leads of applicant's admitted prior art because it makes it possible to easily replace a chip.

In regard to claim 13, the applicant's admitted prior art teaches a plurality of lands provided on the main board, wherein the drive chip leads are electrically connected to the lands (paragraph 9 lines 6).

Response to Arguments

Applicant's arguments filed 6/13/07 have been fully considered but they are not persuasive. On page 6, applicant argues "However, the AAPA does not discuss a plurality of lands electrically connected to seconds. By contrast, the AAPA specifically discusses in paragraph [0008] that 'The **leads** 4 of the laser diode module 3 are electrically connected to the leads 14 of the drive chip 13 **indirectly** by a wiring provided on the main board 11 [emphasis added].'". However the examiner maintains this rejection because the leads of the diode module are connected to the leads of the drive chip (see fig. 1 element 14 of the applicant's admitted prior art). The claim does not require the leads to be directly connected, only electrically connected.

On page 8, applicant argues Ito et al. does not teach the inner connectors of claim 5. However the examiner maintains this rejection because Ito et al. shows the leads being electrically connected to the circuit, meaning there are inner connectors.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Haley whose telephone number is 571-272-0574. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jrh

/William R. Korzuch/

SPE, Art Unit 2627